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10/573,977	02/13/2007	Wenlin Zhang	56815.1600	4160

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BAKER & HOSTETLER LLP
WASHINGTON SQUARE, SUITE 1100
1050 CONNECTICUT AVE. N.W.
WASHINGTON, DC 20036-5304

EXAMINER	
WOO, KUO-KONG	

ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/573,977	ZHANG, WENLIN	
	Examiner	Art Unit	
	KUO WOO	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 February 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6,8-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6,8-29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *13 February 2007* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) filed on 2/13/2007 has been considered.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 14,16-17,19 and 23-27 are rejected under 35 U.S.C. 102(b) as being anticipated by 3GPP "3rd Generation Partnership project; Technical Specification Group Service and System Aspects; 3GPP system to Wireless Local Area Network (WLAN) internetworking; System Description (Release 6)" Draft 3GPP TS 23.234 V1.10.0; May 2003 (2003-05), hereinafter referred to as 3GPP.

Regarding claim 1, An interacting method for WLAN UE fast selecting a mobile communication network to access in WLAN interworking network, wherein comprising the step of " initiating an authentication procedure after the connection between a WLAN UE and WLAN Access Network AN is established" 3GPP teaches (Page 8,

WLAN Radio networks interworking with 3GPP, WLAN Access, Authentication and Authorization, which provides for access to the WLAN and the locally connected IP network (e.g. Internet) to be authenticated and authorized through the 3GPP System);

"Sending a User Identity Request message to WLAN UE"(page 12, for re-authentication, WLAN UE shall use the previously allocated Re authentication ID as specified in the IETF EAP-SIM and EAP-AKA specifications as its NAI user identity);

"On receiving USID request message, deciding network selection, and/or stored in the WLAN UE and returning to WLAN AN" (Page 33, WLAN stores the keying material and authorization information to be used in communication with the authenticated WLAN UE);

"Deciding whether network selection is able to route an authentication request message, otherwise, sending a notification signal to WAN UE, and directing WAL UE to perform subsequent operations" (page 18, If the WAN AN recognizes the realm of initial NAI, then no special processing for network advertisement/selection is needed) and (If the WLAN AN has no direct roaming relationship with the initial realm, the WLAN AN shall deliver the network advertisement information to the UE),wherein the WLAN AN initiate a second request/Identity message. The UE responds to the message with the new NAI determined in the subsequent operations.

Regarding claims 14 and 27, "deleting the identity information of the WLAN and its corresponding network selection information stored by the WLAN UE" 3GPP teaches (Page 42, A1.2. Immediate purging of a user from the WLAN access) and (page 47, A2.2.6. Purge function fro WLAN interworking that it has deleted the information of a

disconnected subscriber after the implicit or explicit (over timer) logging off the subscriber.), wherein WLAN UE stored information was deleted after timer expired.

Regarding claim 16, “wherein network selection information is contained in the Network Access Identity (NAI)” 3GPP teaches (Page 12, 5.4 User identity, for re-authentication, UE shall use the previously allocated Reauthentication ID as specified in IETF [EAP-SIM] and [EAP-AKA] specification as its NAI user identity.

Regarding claim 17, “wherein WLAN UE re-selecting mobile communication network, and obtaining the network information corresponding to the selected mobile communication network and sending a message to WLAN AN” 3 GPP discloses (Page 14, 5.6 IP Network selection, The UE can connect to different IP network, including the internet or external IP network. The user may indicates a preferred IP network with requested WLAN Access Point Name (W-APN), wherein sending a message of new network to the W-APN (WLAN AN).

Regarding claim 19, has limitations similar to those treated in the above claim 17 rejection(s), and are met by the references as discussed above.

Regarding claim 23, “wherein automatically selecting network information sent by the network according to parameters set in advance" 3GPP teaches (Page 17, 5.9.1.3 Network Selection, Support for 3GPP interworking by WLAN may be indicated by the support of a well known SSID value by the WLAN. This SSID may either be Broadcast SSID or will be probed for by the UE), wherein the network selection is set by 3GPP interworking in advance.

Regarding claim 24, has limitations similar to those treated in the above claim 23 rejection(s), and are met by the references as discussed above.

Regarding claim 25, "Wherein, WLAN internetworking network refers to 3GPP-WLAN interworking network" 3GPP teaches (Page 7, 3GPP - WLAN Interworking: Used generically to refer to interworking between the 3GPP system and the WLAN family of standards. Annex B includes examples of WLAN Radio Network Technologies)

Regarding claim 26,"wherein mobile communication network refers to a public land mobile network (PLMN)"(3GPP teaches 9 (Page 19, Scenario 3 requires that all packets sent to/from a WLAN UE are routed via a VPLMN in a 3GPP network), wherein mobile network is applied to home or visitor PLMN.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 2-6 ,8-9 11-12,15,18,20-22 and 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over 3GPP as applied to claim1 above in view of McIntosh et al. (US Patent Application No: 2003/0139180 A1) and further view of Ahmavaara et al. (US Patent Application No: 2004/00666769 A1).

Regarding claim 2, 3GPP teaches WLAN interworking network authentication procedure. However, 3GPP does not explicitly disclose "pre-configuring a mobile communication network with the highest priority to be accessed by WLAN UE".

In an analogous art, McIntosh discloses (Abstract, the system (100) is configured to enable the UEs (130) to access supplementary services provided by the public network (102) and (¶ 20, the communication system includes means for authenticating and authorizing access to the system. The means for authenticating and authorizing access can include a RADIUS system or server coupled to the communication system through a VLR/RADIUS interface), wherein the highest priority choice is by means of RADIUS system to be access by WLAN UE.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use 3GPP teaching in combination of McIntosh provides communication system in which GSM/GPRS/3G broadband services are provided using WLAN broadband technology and in particular using 802.11 based technology. (See ¶ 12.). Rationales for arriving at a conclusion of obviousness suggested by the Supreme Court's decision in KSR include: Combine prior art elements according to known method to yield predictable result.

Regarding claim 3," obtaining the identity information of the current WLAN, matching with stored in WLAN UE as the network selection to be carried; otherwise as claim 2 to be carried as the network selection" McIntosh discloses (¶55, at least one identifier or virtual identifier stored therein that can be permanently or temporarily associated with one or more private UEs 130, to enable the private UE to communicate

with the public network 102 and/or the private cellular network 122 via the WLAN 128) and (the identity module 138 includes subscriber identification and security information stored in a memory system (not shown) coupled to the NIB 124),wherein the network selection information is carried if identity information is matching ,otherwise through RAUIS system will be carried as the network selection information.

Regarding claim 4," if not storing the identity information, otherwise, no storing is performance" McIntosh discloses(¶ 19, the UE further includes a memory system having subscriber identification and security information stored therein, and the step of providing subscriber identification and security information for the UE to the authentication server is accomplished by providing subscriber identification and security information associated from the memory system. and (¶ 80, The RADIUS server 212 determines subscriber information for the visiting UE 130A is not stored in private HLR 216B but in a private HLR 216A in the home private network 120A.) wherein RAUIS system determine the information to be stored or not to be required.

Regarding claim 5,"wherein pre-configured mobile communication work with the highest priority is the home network" McIntosh discloses (¶ 077, FIG. 6 is a block diagram of an embodiment of a communication system 100 having a private corporate LAN 260 including a WLAN 128 according to the present invention, coupled to a public cellular network 104, such as a home public land mobile network (HPLMN), a RADIUS system 210 and an authentication server 228), wherein home network is first choice for selection of network.

Regarding claim 6, "wherein WLAN APID or SSID is media Access Control (MAC) address of the access Point (AP)" McIntosh discloses (¶ 120, Ability to store information about the MAC address of the UE 130 used by the subscriber to access WLAN 128, Calling Station Id), wherein SSID is MAC address for Access Point.

Regarding claim 8, "setting a valid time for the stored network selection to make the stored contents invalid when overtime" McIntosh discloses (¶ 117, Ability to specify the maximum inactivity time after which the UE 130 will be assumed to wandered from out of the range of access point 128A, 128B,128C, and removed from active user list. (Idle Timeout)), wherein once maximum idle time is reached, the stored contents become invalid as system designed.

Regarding claim 9, "identity information of the WLAN exceeds the valid survival time , the highest priority to be carried, otherwise the valid time being consumed continuously" McIntosh discloses (¶ 112 , 113 and 114, Preferably, the RADIUS or private HLR 216 supports all of the following attributes or capabilities: Ability to enable/Disable WLAN 128 access for a particular UE 130, based upon subscriber IMSI, Ability to re-authenticate the subscriber with the WLAN 128 upon timer the session timer expiry at the access point 128A, 128B, 128C. (Session timeout value)), wherein Home networks (the highest priority) will carry identity information after time is expired.

Regarding claim 11 has limitations similar to those treated in the above claim 8 rejection(s), and are met by the references as discussed above.

Regarding claims 15 and 28-29, 3GPP teaches the identity information to be stored in WALN UE. However, 3GPP does not explicitly disclose "setting a threshold of

the number of the information permitted to be stored in the WLAN UE, deleting old or selected information if information exceeds threshold, otherwise storing the identity information of the WLAN".

In an analogous art, McIntosh discloses (¶19, alternatively, the UE further includes or is coupled to a card holder/reader holding a number of GSM-type SIM cards or 3G-type USIM cards, and the step of providing subscriber identification and security information for the UE to the public cellular network involves reading subscriber identification and security information stored in one of the cards held in the card holder/reader), wherein SIM cards store the identity information of the current WLAN. Ahmavaara further describer the SIM and authentication protocol (¶ 43, the authentication signaling with the UE 10 may be based on the EAP SIM authentication protocol in case a GSM SIM card is used within the UE 10. Alternatively, the authentication may be based on the EAP AKA (Authentication and Key Agreement) authentication protocol in case a UMTS SIM card is used within the UE 10.), wherein SIM follows the protocol to delete old information and store the identity information of the WLAN as described herein.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use 3GPP teaching in combination of McIntosh and Ahmavaara provides any given authentication message can be used for transferring the service selection information, and standalone server devices or in GPRS GGSN or SGSN functionalities, respectively. Also, the accessed service does not have to be a GPRS service. Thus, the WLAN UE 10 can be a single-mode WLAN terminal without

GPRS functionality but with functionality to access external services via an authentication signaling, (see ¶ 96). Rationales for arriving at a conclusion of obviousness suggested by the Supreme Court's decision in KSR include:

Combine prior art elements according to known method to yield predictable result.

Regarding claim 18, McIntosh teaches authentication process, however McIntosh does not explicitly disclose "Waiting for response message from WLAN UE for a certain time, of no response has been received, sending a Selection Result Request to WLAN UE".

In an analogous art, Ahmavaara discloses (¶ 54, the client or UE 10 responds with an EAP Identity Response (step 1) comprising a pseudonym or IMSI. The pseudonym is used when an identity privacy support is being used by the UE 10. In response thereto, the UE 10 issues an EAP Challenge Response including the calculated response value SRES. Furthermore, according to the preferred embodiment of the present invention, the EAP Challenge Response also includes at least one encrypted APN parameter specifying the desired GPRS service to be accessed.), and (¶56, At the latest after reception of the EAP request message, the UE 10 gets the required service selection related information from the user and encrypts it as specified by the utilized signaling protocol such as EAP-SIM. The UE 10 then inserts the APN parameter information to the EAP Challenge Response message and sends it to the authentication server 50), wherein WLAN send request to WLAN UE if no response from WLAN UE.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use 3GPP teaching in combination of McIntosh and Ahmavaara provides any given authentication message can be used for transferring the service selection information, and standalone server devices or in GPRS GGSN or SGSN functionalities, respectively. Also, the accessed service does not have to be a GPRS service. Thus, the WLAN UE 10 can be a single-mode WLAN terminal without GPRS functionality but with functionality to access external services via an authentication signaling, (see ¶ 96). Rationales for arriving at a conclusion of obviousness suggested by the Supreme Court's decision in KSR include:

Combine prior art elements according to known method to yield predictable result.

Regarding claim 20, "indicating the WLAN UE that the current selected network is invalid and downloading the mobile communication information needed, sending information to WALN UE, resending to WLAN AN" McIntosh discloses (¶ 59, to enable the private UE 130 to transfer video and audio data, and/or to transfer or download large files or attachments to or from other data processing systems or servers) and (programs downloaded from the WLAN 128, such as the virtual SIM or emulator program, as described above), and (¶ 69, In case of a communication system 100 having a number of private cellular networks 122, each with an associated WLAN 128 and linked by a PWAN (not shown), the RADIUS server 212 can act as a proxy to forward an authentication request via the VRAD 214 to a single, central public HLR/VLR 144 and/or a single, central private HLR 216 Alternatively, where the communication system 100 includes either a distributed public HLR/VLR 144 and/or a distributed

private HLR 216, the RADIUS server 212 routes an interpretation of either a username or a user identity provided in the authentication procedure, to the appropriate public or private HLR), wherein WLAN download required information as needed and resending an access authentication request to WAN AN.

Regarding claim 21 is drawn to the method of using the corresponding method claimed in claims 18. Therefore method claim 21 is rejected for the same reasons of (anticipation or obviousness) as used above.

Regarding claim 22 is drawn to the method of using the corresponding method claimed in claims 20. Therefore method claim 22 is rejected for the same reasons of (anticipation or obviousness) as used above.

7. Claims 10 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over 3GPP as applied to claim1 above in view of Haverinen et al. (US Patent Application No: 2004/0064741 A1).

Regarding claim 10, 3GPP teaches store the identify information in the WLAN UE. However, 3GPP does not explicitly disclose" whether the WLAN UE has stored the information, storing identity information to the current WLAN if there is no such information and resetting the valid survival time".

In an analogous art, Haverinen discloses (¶46, the operator of the access network may control the identity of the user of the terminal if necessary), (¶84, The time between sending two consecutive EAP-requests including accounting information of a specific terminal may be based on the time between reception of accounting information, a value of a specific property of the accounting information),(¶ 87 The

verifier 414 is arranged to verify the signature and the content of the EAP-response message).and (¶ 91, When the EAP-request is sent, a timer is started, step 508. In step 510 the value of the timer is compared with a predetermined time limit, t.sub.limit. If the value of the timer does not exceed t.sub.limit then the process continues by checking whether an EAP-response has been received from the terminal, step 514). In Fig 5, sending EAP-request to terminal (WLAN UE), it starting timer 508, otherwise verify content and signature in received EAP-RESP. Wherein timer is resetting timer for sending EAP-RESP.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use 3GPP teaching in combination of Haverien provides the metered data as accounting information to at least one Extensible Authentication Protocol (EAP) service authorization server, sends, by means of an Extensible Authentication Protocol request (EAP-request), a service authorization request from the at least one EAP service authorization server to the at least one terminal (see Abstract). Rationales for arriving at a conclusion of obviousness suggested by the Supreme Court's decision in KSR include: Combine prior art elements according to known method to yield predictable result.

Regarding claim 13 has limitations similar to those treated in the above claim 11 rejection(s), and are met by the references as discussed above.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KUO WOO whose telephone number is (571)270-7266. The examiner can normally be reached on Monday through Friday 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lester Kincaid can be reached on 571-272-7922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Lester Kincaid/
Supervisory Patent Examiner, Art Unit 2617

/KUO WOO/
Examiner, Art Unit 2617